Federal Aviation Administration

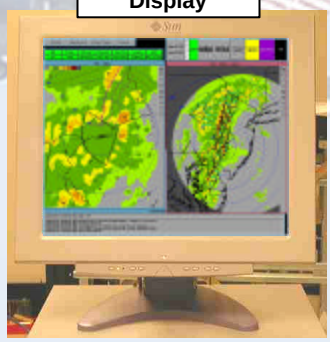
Integrated Terminal Weather System

Capacity

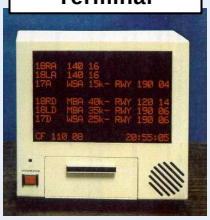
System Efficiency

The Integrated Terminal Weather System (ITWS) is an automated weather information system, and it uses a variety of weather sensors to make full use of airport runways in all kinds of weather.

ITWS Situation Display



Ribbon Display Terminal

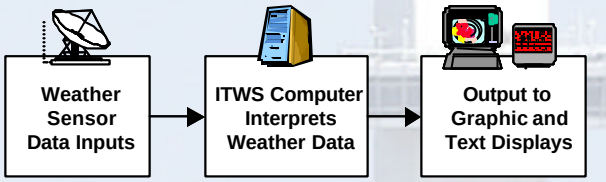


HISTORY

The Federal Aviation Administration (FAA) installed an initial version of the ITWS at four airports in the United States between 1993 and 1998. The sites included Orlando, FL, Memphis, TN, Dallas/Fort Worth, TX, and New York, NY. The Massachusetts Institute of Technology, Lincoln Laboratory wrote the prototype software code and much of that code was used in the final production system. Raytheon Company was selected to build the production ITWS hardware and software. Based on the success of the prototype systems, the FAA expects significant cost savings from using the ITWS.

WHAT DOES ITWS DO?

The ITWS receives data from weather and surveillance radars and sensors, and then uses computer software to display current weather information in graphic and text formats. The ITWS provides weather products that are easy to understand and it removes the need for interpretation by meteorologists.



WHERE WILL ITWS BE INSTALLED?

The FAA plans to install ITWS displays at several locations, including Air Traffic Control Towers, Terminal Radar Approach Control Facilities, and Air Route Traffic Control Centers. Intranet web-based ITWS products will be available to users at the Air Traffic Control System Command Center and airline operations centers. Pilots can also receive ITWS information in the cockpit.

WHAT WEATHER SENSOR INPUTS DOES ITWS USE?

The ITWS receives data from FAA and National Weather Service (NWS) sensors as well as airborne aircraft flying within a few miles of airports. The ITWS uses weather products such as the Terminal Doppler Weather Radar, Next Generation Weather Radar, and Airport Surveillance Radar-Model 9. Other inputs are received from the National Lightning Detection Network, NWS Rapid Update Cycle data, and the Meteorological Data Collection and Reporting System. The ITWS also uses the Low Level Wind Shear Alert System and Automated Weather Observing System and Automated Surface Observing System.

WHAT WEATHER INFORMATION DOES ITWS GENERATE?

ITWS detects and predicts wind shear, microbursts and gust fronts and it displays current precipitation levels. The system tracks the speed and direction of storm cells, and predicts the movement of storms. It also detects hail, lightning, and tornadoes.

WHY DO WE NEED ITWS?

Accurate prediction of weather affecting airports can greatly reduce arrival and departure flight delays, saving time for the flying public and money for the airlines. The ITWS provides excellent weather prediction at airports, which is good news for air travelers and airline companies alike. Air traffic managers use the ITWS to assess the future time and location of bad weather at airports since it affects airborne planes and ground operations. The managers in control towers use information on the ITWS display to keep runways open longer as bad weather approaches, allowing more takeoffs and landings. Runways that are closed due to bad weather can also be reopened sooner, thanks to the accuracy provided by the ITWS.

System Efficiency ✈ Capacity

ACCOMPLISHMENTS

The ITWS team celebrated the commissioning of its first fully operational site at Kansas City International Airport (MCI) on April 10, 2003.

ITWS received the "Best of What's New" award from *Popular Science* magazine in December 2001, in the Aviation & Space category.

SYSTEM INSTALLATION ACTIVITIES

The ITWS has been installed at the following airport facilities:

- Atlanta, GA
- Chicago, IL
- Houston, TX
- Kansas City, MO
- Miami, FL
- Potomac TRACON
- St. Louis, MO

Future ITWS installations are planned at the following airport facilities:

- Boston, MA
- Charlotte, NC
- Cincinnati, OH
- Cleveland, OH
- Columbus, OH
- Dallas/Ft. Worth, TX
- Dayton, OH
- Denver, CO
- Detroit, MI
- Indianapolis, IN
- Las Vegas, NV
- Louisville, KY
- Memphis, TN
- Minneapolis, MN
- Nashville, TN
- New Orleans, LA
- New York, NY
- Oklahoma City, OK
- Orlando, FL
- Philadelphia, PA
- Phoenix, AZ
- Pittsburgh, PA
- Raleigh-Durham, NC
- Salt Lake City, UT
- San Juan, PR
- Tulsa, OK
- Wichita, KS

CONTACT INFORMATION

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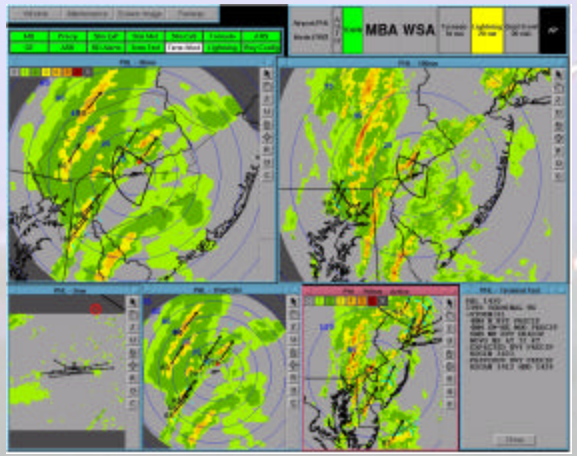

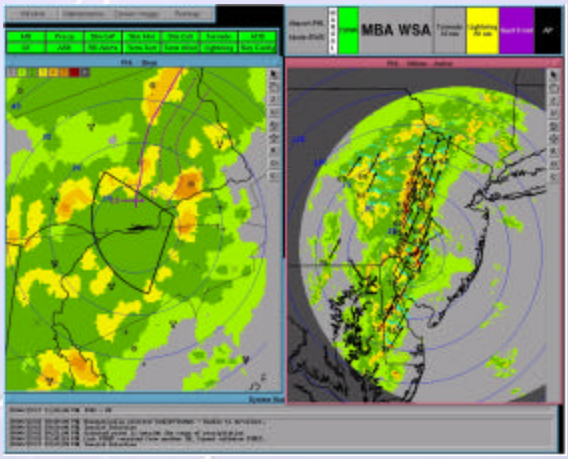

Representative weather images from an ITWS Situation Display